M. Wilson Reben

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#50

1600

RAW SEQUENCE LISTING DATE: 06/17/2003
PATENT APPLICATION: **US/08/812,393B** TIME: 15:01:17

Input Set : **N:\EBONY'S\US08812393B.raw**
Output Set: **N:\CRF4\06172003\H812393B.raw**

```
      1 <110> APPLICANT: SHERMAN, LINDA A.
      2       LUSTGARTEN, JOSEPH
      3 <120> TITLE OF INVENTION: RECOMBINANT CONSTRUCTS ENCODING T CELL RECEPTORS
      4       SPECIFIC FOR HUMAN HLA-RESTRICTED TUMOR ANTIGENS
      5 <130> FILE REFERENCE: 46147/5E793
C-->  6 <140> CURRENT APPLICATION NUMBER: US/08/812,393B
C-->  7 <141> CURRENT FILING DATE: 1997-03-08
      8 <160> NUMBER OF SEQ ID NOS: 64
      9 <170> SOFTWARE: PatentIn Ver. 2.1
     10 <210> SEQ ID NO: 1
     11 <211> LENGTH: 1380
     12 <212> TYPE: DNA
     13 <213> ORGANISM: Artificial Sequence
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     15 <221> NAME/KEY: CDS
     16 <222> LOCATION: (1)..(1332)
     17 <220> FEATURE:
     18 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
     19       single chain TCR derivative nucleotide sequence
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     21       ctc gag atg cag agg aac ctg gga gct gtg ctg ggg att ctg tgg gtg   48
     22       Leu Glu Met Gln Arg Asn Leu Gly Ala Val Leu Gly Ile Leu Trp Val
     23         1               5                  10                  15
     24       cag att tgc tgg ctg aaa gaa cag caa gtg cag cag agt ccc gca tcc   96
     25       Gln Ile Cys Trp Leu Lys Glu Gln Gln Val Gln Gln Ser Pro Ala Ser
     26                      20                  25                  30
     27       ttg gtt ctg cag gag ggg gag aac gca gag ctc cag tgt agc ttt tcc  144
     28       Leu Val Leu Gln Glu Gly Glu Asn Ala Glu Leu Gln Cys Ser Phe Ser
     29                  35                  40                  45
     30       atc ttt aca aac cag gtg cag tgg ttt tac caa cgt cct ggg gga aga  192
     31       Ile Phe Thr Asn Gln Val Gln Trp Phe Tyr Gln Arg Pro Gly Gly Arg
     32             50                  55                  60
     33       ctc gtc agc ctg ttg tac aat cct tct ggg aca aag cag agt ggg aga  240
     34       Leu Val Ser Leu Leu Tyr Asn Pro Ser Gly Thr Lys Gln Ser Gly Arg
     35         65                  70                  75                  80
     36       ctg aca tcc aca aca gtc att aaa gaa cgt cgc agc tct ttg cac att  288
     37       Leu Thr Ser Thr Thr Val Ile Lys Glu Arg Arg Ser Ser Leu His Ile
     38                      85                  90                  95
     39       tcc tcc tcc cag atc aca gac tca ggc act tat ctc tgt gcc tca aat  336
     40       Ser Ser Ser Gln Ile Thr Asp Ser Gly Thr Tyr Leu Cys Ala Ser Asn
                     100                 105                 110
              tct gga gga agc aat gca aag cta acc ttc ggg aaa ggc act aaa ctc  384
              Ser Gly Gly Ser Asn Ala Lys Leu Thr Phe Gly Lys Gly Thr Lys Leu
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45                 115                 120                 125
46  tct gtt aaa tca ggt ggc gga ggg tct ggc ggg ggt gga tcc ggg ggt   432
47  Ser Val Lys Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
48      130                 135                 140
49  gga ggc tca gag gct gca gtc acc caa agc cca aga aac aag gtg gca   480
50  Gly Gly Ser Glu Ala Ala Val Thr Gln Ser Pro Arg Asn Lys Val Ala
51  145                 150                 155                 160
52  gta aca gga ggg aag gtg aca ttg agc tgt aat cag act aat aac cac   528
53  Val Thr Gly Gly Lys Val Thr Leu Ser Cys Asn Gln Thr Asn Asn His
54                  165                 170                 175
55  aac aac atg tac tgg tat cgg cag gac acg ggg cat ggg ctg agg ctt   576
56  Asn Asn Met Tyr Trp Tyr Arg Gln Asp Thr Gly His Gly Leu Arg Leu
57              180                 185                 190
58  atc cat tat tca tat ggt gct ggc agc act gag aaa gga gat atc cct   624
59  Ile His Tyr Ser Tyr Gly Ala Gly Ser Thr Glu Lys Gly Asp Ile Pro
60          195                 200                 205
61  gat ggc tac aag gcc tcc aga cca agc caa gag aac ttc tcc ctc att   672
62  Asp Gly Tyr Lys Ala Ser Arg Pro Ser Gln Glu Asn Phe Ser Leu Ile
63      210                 215                 220
64  ctg gag ttg gct acc ccc tct cag aca tca gtg tac ttc tgt gcc agc   720
65  Leu Glu Leu Ala Thr Pro Ser Gln Thr Ser Val Tyr Phe Cys Ala Ser
66  225                 230                 235                 240
67  ggt gag aca ggg acc aac gaa aga tta ttt ttc ggt cat gga acc aag   768
68  Gly Glu Thr Gly Thr Asn Glu Arg Leu Phe Phe Gly His Gly Thr Lys
69                  245                 250                 255
70  ctg tct gtc ctg act agt aac tcc atc atg tac ttc agc cac ttc gtg   816
71  Leu Ser Val Leu Thr Ser Asn Ser Ile Met Tyr Phe Ser His Phe Val
72              260                 265                 270
73  ccg gtc ttc ctg cca gcg aag ccc acc acg acg cca gcg ccg cga cca   864
74  Pro Val Phe Leu Pro Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro
75          275                 280                 285
76  cca aca ccg gcg ccc acc atc gcg tcg cag ccc ctg tcc ctg cgc cca   912
77  Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
78      290                 295                 300
79  tct agt tct aga gat ccc aaa ctc tgc tac ctg ctg gat gga atc ctc   960
80  Ser Ser Ser Arg Asp Pro Lys Leu Cys Tyr Leu Leu Asp Gly Ile Leu
81  305                 310                 315                 320
82  ttc atc tat ggt gtc att ctc act gcc ttg ttc ctg aga gtg aag ttc  1008
83  Phe Ile Tyr Gly Val Ile Leu Thr Ala Leu Phe Leu Arg Val Lys Phe
84                  325                 330                 335
85  agc agg agc gca gac gcc ccc gcg tac cag cag ggc cag aac cag ctc  1056
86  Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
87              340                 345                 350
88  tat aac gag ctc aat cta gga cga aga gag gag tac gat gtt ttg gac  1104
89  Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
90          355                 360                 365
91  aag aga cgt ggc cgg gac cct gag atg ggg gga aag ccg aga agg aag  1152
92  Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys
93      370                 375                 380
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PATENT APPLICATION: US/08/812,393B TIME: 15:01:17

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Output Set: N:\CRF4\06172003\H812393B.raw

```
aac cct cag gaa ggc ctg tac aat gaa ctg cag aaa gat aag atg gcg   1200
Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
385                 390                 395                 400
gag gcc tac agt gag att ggg atg aaa ggc gag cgc cgg agg ggc aag   1248
Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
                405                 410                 415
ggg cac gat ggc ctt tac cag ggt ctc agt aca gcc acc aag gac acc   1296
Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
            420                 425                 430
tac gac gcc ctt cac atg cag gcc ctg ccc cct cgc taa ggg ggc ggc   1344
Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
        435                 440
acc gcg                                                          1350
<210> SEQ ID NO: 2
<211> LENGTH: 444
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
single chain TCR protein
<400> SEQUENCE: 2
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 1               5                  10                  15
Gln Ile Cys Trp Leu Lys Glu Gln Gln Val Gln Gln Ser Pro Ala Ser
            20                  25                  30
Leu Val Leu Gln Glu Gly Glu Asn Ala Glu Leu Gln Cys Ser Phe Ser
        35                  40                  45
Ile Phe Thr Asn Gln Val Gln Trp Phe Tyr Gln Arg Pro Gly Gly Arg
    50                  55                  60
Leu Val Ser Leu Leu Tyr Asn Pro Ser Gly Thr Lys Gln Ser Gly Arg
65                  70                  75                  80
Leu Thr Ser Thr Thr Val Ile Lys Glu Arg Arg Ser Ser Leu His Ile
                85                  90                  95
Ser Ser Ser Gln Ile Thr Asp Ser Gly Thr Tyr Leu Cys Ala Ser Asn
            100                 105                 110
Ser Gly Gly Ser Asn Ala Lys Leu Thr Phe Gly Lys Gly Thr Lys Leu
        115                 120                 125
Ser Val Lys Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
    130                 135                 140
Gly Gly Ser Glu Ala Ala Val Thr Gln Ser Pro Arg Asn Lys Val Ala
145                 150                 155                 160
Val Thr Gly Gly Lys Val Thr Leu Ser Cys Asn Gln Thr Asn Asn His
                165                 170                 175
Asn Asn Met Tyr Trp Tyr Arg Gln Asp Thr Gly His Gly Leu Arg Leu
            180                 185                 190
Ile His Tyr Ser Tyr Gly Ala Gly Ser Thr Glu Lys Gly Asp Ile Pro
        195                 200                 205
Asp Gly Tyr Lys Ala Ser Arg Pro Ser Gln Glu Asn Phe Ser Leu Ile
    210                 215                 220
```

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PATENT APPLICATION: US/08/812,393B TIME: 15:01:17

Input Set : N:\EBONY'S\US08812393B.raw
Output Set: N:\CRF4\06172003\H812393B.raw

```
144        Leu Glu Leu Ala Thr Pro Ser Gln Thr Ser Val Tyr Phe Cys Ala Ser
145        225                 230                 235                 240
146        Gly Glu Thr Gly Thr Asn Glu Arg Leu Phe Phe Gly His Gly Thr Lys
147                    245                 250                 255
148        Leu Ser Val Leu Thr Ser Asn Ser Ile Met Tyr Phe Ser His Phe Val
149                    260                 265                 270
150        Pro Val Phe Leu Pro Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro
151                275                 280                 285
152        Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
153            290                 295                 300
154        Ser Ser Ser Arg Asp Pro Lys Leu Cys Tyr Leu Leu Asp Gly Ile Leu
155        305                 310                 315                 320
156        Phe Ile Tyr Gly Val Ile Leu Thr Ala Leu Phe Leu Arg Val Lys Phe
157                    325                 330                 335
158        Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
159                    340                 345                 350
160        Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
161                355                 360                 365
162        Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys
163            370                 375                 380
164        Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
165        385                 390                 395                 400
166        Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
167                    405                 410                 415
168        Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
169                    420                 425                 430
170        Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
171                435                 440
173 <210> SEQ ID NO: 3
174 <211> LENGTH: 24
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
177 <220> FEATURE:
178 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
179 <400> SEQUENCE: 3
180        cccaaggcac tgatgttcat cttc                                          24
182 <210> SEQ ID NO: 4
183 <211> LENGTH: 27
184 <212> TYPE: DNA
185 <213> ORGANISM: Artificial Sequence
186 <220> FEATURE:
187 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
188 <400> SEQUENCE: 4
189        tgagacaaag tccccaatct ctgacag                                       27
191 <210> SEQ ID NO: 5
192 <211> LENGTH: 26
193 <212> TYPE: DNA
194 <213> ORGANISM: Artificial Sequence
195 <220> FEATURE:
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RAW SEQUENCE LISTING DATE: 06/17/2003
PATENT APPLICATION: US/08/812,393B TIME: 15:01:17

Input Set : N:\EBONY'S\US08812393B.raw
Output Set: N:\CRF4\06172003\H812393B.raw

196 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
197 <400> SEQUENCE: 5
198 ctgcaggctgc tcctcaagta ctattc 26
200 <210> SEQ ID NO: 6
201 <211> LENGTH: 28
202 <212> TYPE: DNA
203 <213> ORGANISM: Artificial Sequence
204 <220> FEATURE:
205 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
206 <400> SEQUENCE: 6
207 tcccggaaaa agtccacagt tcctcttt 28
209 <210> SEQ ID NO: 7
210 <211> LENGTH: 29
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
213 <220> FEATURE:
214 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
215 <400> SEQUENCE: 7
216 gaagcagcag agggtttgaa gccacatac 29
218 <210> SEQ ID NO: 8
219 <211> LENGTH: 27
220 <212> TYPE: DNA
221 <213> ORGANISM: Artificial Sequence
222 <220> FEATURE:
223 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
224 <400> SEQUENCE: 8
225 gccaagtctt cagttgctta tgaaggt 27
227 <210> SEQ ID NO: 9
228 <211> LENGTH: 27
229 <212> TYPE: DNA
230 <213> ORGANISM: Artificial Sequence
231 <220> FEATURE:
232 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
233 <400> SEQUENCE: 9
234 ggttcctctt cagggtccag aatatgt 27
236 <210> SEQ ID NO: 10
237 <211> LENGTH: 27
238 <212> TYPE: DNA
239 <213> ORGANISM: Artificial Sequence
240 <220> FEATURE:
241 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
242 <400> SEQUENCE: 10
243 gccaagaact caccctggac tgttcat 27
245 <210> SEQ ID NO: 11
246 <211> LENGTH: 30
247 <212> TYPE: DNA
248 <213> ORGANISM: Artificial Sequence
249 <220> FEATURE:
250 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer

VERIFICATION SUMMARY DATE: 06/17/2003
PATENT APPLICATION: US/08/812,393B TIME: 15:01:18

Input Set : N:\EBONY'S\US08812393B.raw
Output Set: N:\CRF4\06172003\H812393B.raw

L:6 M:270 C: Current Application Number differs, Wrong Format
L:7 M:271 C: Current Filing Date differs, Replaced Current Filing Date

STATISTICS SUMMARY DATE: 06/17/2003
PATENT APPLICATION: **US/08/812,393B** TIME: 15:01:18

Input Set : **N:\EBONY'S\US08812393B.raw**
Output Set: **N:\CRF4\06172003\H812393B.raw**

Application Serial Number: US/08/812,393B
Alpha or Numeric or Xml: Numeric
Application Class:
Application File Date: 03-08-1997
Art Unit: 1600
Software Application: PatentIN2.1
Total Number of Sequences: 64
Total Nucleotides: 3155
Total Amino Acids: 875
Number of Errors: 0
Number of Warnings: 0
Number of Corrections: 2

MESSAGE SUMMARY

270 C: 1 (Current Application Number differs)
271 C: 1 (Current Filing Date differs)